

1992 to 68 percent in 1997. This is related to the introduction of Romanian as a state language in 1989. The number of students whose language of instruction is Russian decreased by the same percentage (10 percent). Several universities have departments that offer instruction in English, French, or German, especially in the fields of business, economics, and law.

Discrimination by social background and sex in public education is another issue of great concern.

- Ownership type—out of the 24 universities, 13 are public, 9 are private, and 2 are “mixed.” Public universities account for 90 percent of all the students in the country.

- Enrollment status—while 73 percent of students are enrolled full time, 27 percent are part-time students.

- International linkages—in conjunction with former Soviet republics, Romania, Turkey, Syria, and Western developed countries some student exchange programs are being developed, with the involvement of international donors, national ministries, and the respective universities themselves.

A more differentiated higher educational system better serves the public interest because it will:

- force public educational and research institutions to become more competitive;

- help bring the educational system in line with world systems by having a large array of modern curricula, developing more relevant programs at the master’s level, etc.;

- adapt the labor force to new economic conditions given that the transition to the market economy will increase demands for people trained in certain specialties (e.g. economists, lawyers, English translators, programmers); and

- increase flexibility by allowing students to choose the language of instruction and type of enrollment, to specialize in more than one major subject, to reduce the period of higher educational studies. ■

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Recent Developments in Higher Education in Singapore

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Amid the recent economic turmoil in East and South East Asia, the Singapore government continues to press ahead with its plans to review the higher education system. The primary motivation for doing so is the maintenance of national economic competitiveness in the global economy. These changes in higher education are being undertaken in tandem with reforms in the primary and secondary sectors of education.

One of the major policy aims announced by the prime minister in 1997 was the development of the National University of Singapore and the Nanyang Technological University into “world-class” institutions. Singapore was to be turned into the “Boston of the East,” with Harvard University and the Massachusetts Institute of Technology serving as role models. An international team of 11 prominent academics from prestigious Japanese, U.S., and European universities was invited that same year to advise on how this aim might be achieved. Among the team’s recommendations was that undergraduates be exposed to a multidisciplinary and broad-based curriculum. A second recommendation was the establishment of national research institutes with strong links to both universities as well as to industry. A third proposal was that undergraduates and postgraduates be recruited from outside Singapore in order to meet the economy’s demand for university graduates.

At the same time as this general review of the two universities was being undertaken, a team of 20 professors from the Massachusetts Institute of Technology reviewed the engineering curricula at the two universities. They recommended reducing bureaucratic red tape that might impede research work. In addition, they suggested conducting admissions interviews to identify students who did not have excellent grades but who were intelligent and creative. A third recommendation was that both universities actively search for world-class faculty.

Over the last two years, the two universities have announced a series of curricular reforms. First, undergraduate curricula will be revised to enable students to pursue courses outside their immediate fields of specialization. Second, there have been moves to implement a wider range of assessment modes instead of relying solely on written examinations. Third, efforts

have been made to develop creativity and thinking skills in the curriculum.

Alongside these curricular reforms, admissions criteria for university entrance are also being reviewed. A panel of 12—comprised of academics, policymakers, school principals, and businessmen—has visited Sweden, the United Kingdom, the United States, Israel, and Japan to study university admissions systems. The panel is expected to release its report at the end of 1998 and has indicated that it is considering the broadening of admissions criteria to include not only examination scores but also project work, performance in reasoning tests along the lines of the Scholastic Assessment Test, and participation in extracurricular activities.

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Another major policy target is the expansion of graduate enrollments and research endeavors. This is because R&D in the sciences and engineering has been identified as a major prong in the government’s plans for Singapore to remain economically competitive in what is perceived as the “knowledge economy” of the 21st century. In recognition of the importance of R&D, the government has pledged that its R&D budget will not be reduced in spite of the current economic crisis affecting Singapore.

One strategy being tried toward this end is the recruitment of talented Singaporeans who are currently working overseas, as well as non-Singaporeans, to take up R&D careers in Singapore. Yet another is the recent announcement of a local “science hub” that will be ready in 15 years’ time. Besides housing research institutes, the science hub will include branch campuses of prestigious universities such as Johns Hopkins University and the French business school, INSEAD. A third strategy involves further increasing engineering intakes at the undergraduate level in the local universities so as to enlarge the pool of potential researchers. In a bid to increase the number and percentage of foreign students, recruitment drives have been launched in Southeast Asian countries as well as in India, China, South Africa, and Mauritius. The extra premium in university tuition that foreigners are charged has been reduced in an attempt to ensure that 20 percent of undergraduates are foreign students.

Although most of the attention has centered on the two universities, other institutions have attracted their share of publicity since they have also been the object of reforms. The Singapore Institute of Management, which is currently run as a private institution, is to be developed into Singapore’s third university while continuing to be privately run. The government has pledged to provide capital funding for this new institution, which is to specialize in undergraduate business and finance courses.

A 16-member committee comprised of academics, politicians, civil servants, and prominent individuals in the local arts scene worked on the upgrading of two fine arts colleges, the La Salle-SIA College of Fine Arts and the Nanyang Academy of Fine Arts. The committee members visited 26 institutions in Australia, the United Kingdom, the United States, Australia, Hong Kong, Taiwan, and the People’s Republic of China to draw on the experiences of world-class institutions. An international advisory panel of four academics from the United States, Hong Kong, the United Kingdom, and Australia was also invited to provide recommendations. The committee released its report in August 1998, in which it recommended that the two colleges and the National University of Singapore work together to award diplomas and degrees in the visual and performing arts. The government once again revealed a strong economic bias when it announced that these reforms would enable Singapore to “compete in the next century as a creative nation with additional sets of skills and capabilities.”¹

Several notable trends may be detected in the flurry of reforms. First, there is a continuing and overriding concern with the role of higher education in sustaining economic competitiveness. Even the reform of the arts colleges has been undertaken toward this end. This is perhaps not surprising since the government views human resources as the only means of economic survival.

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Second, the government is concerned that creativity and innovation take root in higher education. Its curricular reforms and emphasis on R&D parallel similar reforms in the primary and secondary sectors, where reforms under the banner of “thinking schools” are being planned and implemented at breakneck speed. It will

not be easy to persuade teachers, students, and parents that changes need to be made to established modes of teaching and learning, especially since these practices are seen as having served Singapore well in the past. A local researcher has also pointed out further inhibiting factors toward the development of a thriving R&D culture—namely, the lack of an indigenous R&D tradition and the relative lack of interest among many local undergraduates in an R&D career.² In other words, it may not be sufficient to provide generous research funding and to import foreign talent.

The aim is nothing less than to establish links with the most prestigious universities as well as academic and research standards comparable to those in these institutions.

A third trend is the continued reliance on foreign expertise, especially from the industrialized nations, and the modeling of Singapore's initiatives on those found in academic institutions within those nations. The aim is nothing less than to establish links with the most prestigious universities as well as academic and research standards comparable to those in these institutions. At the same time, there is also recognition that it might be unrealistic to expect local institutions to attain the same degree of worldwide renown as an institution such as Harvard University. Some academics have suggested instead that the National University of Singapore model itself after the University of California at Berkeley. It is rather doubtful to what extent Singapore will ever be in a position to attract world-class faculty and students on anything like the scale at more prestigious institutions. The fact remains that in several senses, Singapore still remains on the periphery of the international academic system. It is therefore unlikely that a substantial number of top-notch researchers would contemplate giving up their posts in North America and Europe for a long-term career in Singapore. ■

Notes

1. Committee to Upgrade LASALLE and NAFA, *Creative Singapore: A Renaissance Nation in the Knowledge Age* (Singapore: author, 1998), 38.
2. C. B. Goh, "Science and Technology in Singapore: The Mindset of the Engineering Undergraduate," *Asia Pacific Journal of Education* 18, no.1 (1998): 7–24; C. B. Goh, "Imported Technology: Its Idea and Development," part 1. *Journal of the Malaysian Branch of the Royal Asiatic Society* 71 (1998): 41–54.

Postsecondary Education Evolution in Chile

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In Chile, postsecondary education and particularly the universities have a strong linkage with the state for two reasons. First, universities were created as state institutions to educate civil servants, and until the 1960s the state remained the main employer for professional workers. Second, in spite of university autonomy the state used to finance much of the universities' budget.

This situation explains why political change in the country has such an impact on the post secondary educational system. In the last three decades the system has had to contend with four governments ranging in orientation from leftist socialist to a rightist military junta.

In the mid-1960s, the newly elected government promoted the policies of *desarrollismo* (modernization of production, increased production for domestic consumption, and the promotion of equity by distribution of national incomes and the increase of capital by massive savings). The state assumed an important regulatory role, and postsecondary education became a basic element in the drive toward modernization. At that time the country had eight universities—two large national public ones and six private ones (of these, three were catholic universities and three were closely related to the local community).

In the mid-1960s, enrollments amounted to 3.7 percent of the 18-to-24-year-old age group. The government decided to increase enrollments as part of the goals of development. Considering it more difficult and expensive to expand the state institutions, it was decided to partially finance the private ones. Moreover, to maintain standards, the applicants were selected through a national admissions test (PAA). As a result this policy, enrollments increased at an annual rate of 15.2 percent during this period.

In 1970, a socialist government was elected, and postsecondary education was declared a right of the youth of the nation. In order to satisfy demand tuitions and fees were nearly entirely abolished and the state fully financed postsecondary education at both state and private institutions. This is why even today the traditional private universities have the same financial support as the state institutions. Because of the concept of university autonomy the state exercised no control over the public funds, but quality control remained, in the form of the national admissions test. Enrollments increased by an annual rate of 24.2 percent. By the end of this government, in 1973, the rate of enrollments reached the 11.8 percent of the col-